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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/631,078	07/31/2003	Herman K. Duper	4375 CIP	2037

7590 02/09/2006

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EXAMINER	
GORMAN, DARREN W	
ART UNIT	PAPER NUMBER
3752	

DATE MAILED: 02/09/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/631,078	DUPER, HERMAN K.	
	Examiner	Art Unit	
	Darren W. Gorman	3752	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-10* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-10* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

1. Claims 1-10 are objected to because of the following informalities:

Regarding claim 1, line 3 recites an air chamber in the snow gun housing and line 6 recites an air chamber in the nozzle housing being associated with each of the at least one nucleating nozzle. Then between lines 8 through 14, "said air chamber" is recited multiple times. As understood by the Examiner, the aforementioned recitations of "said air chamber" are referring to the air chamber(s) in the nozzle housing associated with the nucleating nozzle(s), however some language should be included in the claim to differentiate the "air chamber" of the snow gun housing from the "air chamber(s)" of the nozzle housing.

Regarding claim 3, "the rearward ends of said water nozzles" does not have clear antecedent basis. It is understood by the Examiner that this recitation is referring to rearward ends of the water apertures, as recited on lines 9-11 of claim 1, however the recitation is somewhat unclear.

Regarding claim 4, "said exterior nozzles" does not have clear antecedent basis. Claim 1 recites an "exterior nozzle aperture", and claim 3 further limits the apparatus to a plurality of exterior nozzle apertures, but "exterior nozzles" have not clearly been recited.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ash, USPN 4,465,230, in view of Handfield, USPN 5,836,514.

Ash shows a snow making apparatus (see Figures 1 and 2) comprising: a metal snow gun housing (10) having independent air (22, 14) and water (23) chambers therein; a metal block nozzle housing (12) (see Figure 6) disposed in the snow gun housing and having a plurality of nucleating nozzles, each of the nucleating nozzles including an air chamber (21), the nozzle housing having a plurality of air apertures (defined by separator vanes (19); see Figures 3-6; and column 3, lines 46-51), each of the air apertures registering with one of each of the nozzle housing air chambers (21), each of these air chambers (21) including an external end and an internal end. Ash further shows a water aperture (27) on the internal end of each air chamber (21) with a forward end thereof axially exposed to the interior of its corresponding air chamber (21) and having a rearward end thereof exposed to the snow gun housing water chamber (23) for projecting a laminar jet stream of water under pressure from each water aperture through each corresponding air chamber (21), and on through an exterior nozzle aperture (31) located at the external end of each corresponding air chamber (21) (see Figures 3 and 7). Ash further shows that each of the exterior nozzle apertures are axially aligned (32) with and larger in diameter than

each corresponding water aperture, whereby the laminar water jet streams are each uniformly encased within a sheath of compressed air and the water jet streams pass through the exterior nozzle apertures without engaging sides of the exterior nozzle apertures (see Figure 7; and column 6, lines 16-30). Ash further shows a plurality of access plugs (18) in the snow gun housing, which permit access to the water chamber.

Further, though Ash does recognize the problem of clogging within the gun housing by providing access plugs for cleaning any lodged foreign matter (see column 3, lines 39-42), Ash does not expressly include a removable filter.

Handfield shows a snow making apparatus having a nozzle housing (1) including a filter (2) being threadably (26) secured to the nozzle housing (see Figures 2 and 3; and column 4, lines 55-59) for filtering water supplied to the nozzle housing from a water chamber (16).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to include a removable filter, as taught by Handfield, for filtering the water supplied to the nozzle housing from the water chamber of Ash, in order to prevent foreign matter from passing into the nozzle housing and potentially clogging the apparatus.

4. Claims 2-7 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ash as modified by Handfield and applied to claim 1 above, and further in view of Ratnik et al., USPN 5,699,961.

Ash, as modified by Handfield above, teaches all of the claimed limitations as set forth in

claim 1, and further, Ash shows the rearward ends of each of the water apertures (27) exiting to a common single rearward end cavity (13) (see Figure 3), and shows the snow gun housing on the upper end of a tower (43).

However, Ash does not expressly teach including at least one primary water nozzle in the snow gun housing for spraying water to atmosphere for interaction with spray from the exterior nozzle apertures. Further, Ash shows nozzle bores forming the exterior nozzle apertures rather than expressly teaching the exterior nozzle apertures as being part of removable exterior nozzles. Still further, the composition of the filter and the size of the filter apertures are not expressly disclosed. And further, the diametrical dimensions of the water apertures and exterior nozzle apertures are not disclosed as being approximately .010 inches and .060 inches, respectively.

Ratnik teaches a snow gun (12) having at least one primary water nozzle assembly (16) positioned for spraying water (S) to atmosphere for interaction with spray (S') from a plurality of nucleating nozzles (18) (see Figures 1, 2 and 4; and column 3, line 66 through column 4, line 11), whereby a significantly greater quantity of snow is produced by the apparatus compared to having only the nucleating nozzles.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have included at least one primary water nozzle, as taught by Ratnik, with the snow gun shown by Ash, in order to produce a significantly greater quantity of snow from the snow gun compared to having only nucleating nozzles.

As to the limitation that the exterior nozzles are removable, it is old an well known to provide removably secured nozzles in a snow gun housing such that the nozzles can be easily removed for cleaning/maintenance and such that the nozzles can be replaced individually,

without having to replace the entire housing assembly. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to replace the nozzle bores provided in the snow gun housing of Ash with removably secured exterior nozzles, as is well known in the art, such that the nozzles can be easily removed for cleaning/maintenance and such that the nozzles can be replaced individually, without having to replace the entire housing assembly.

As to the composition of the filter mesh of Ash (as modified), it would have been obvious to one having ordinary skill in the art at the time the invention was made to form the filter mesh of Ash (as modified), using metal, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious choice. *In re Leshin*, 125 USPQ 416 (CCPA 1960)

As to the size of the filter apertures of Ash (as modified), it is old and well known to select a filter aperture size based on a minimum size of foreign matter, which may potentially clog elements of an apparatus located downstream from the filter. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to select the recited filter aperture size for the filter of Ash (as modified), in order to prevent foreign matter from clogging elements of the snow gun located downstream from the filter.

As to the diametrical dimensions of the water apertures and exterior nozzle apertures of Ash as not expressly being approximately .010 inches and .060 inches, respectively, it is old and well known to select diameters of nozzle element apertures based on user selected/desired spray characteristics. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made select the recited diametrical dimensions of the water apertures

and exterior nozzle apertures of Ash, in order to create a user selected/desired spray characteristic, and since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233 (CCPA 1955)

5. Claims 8 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ash as modified by Handfield and Ratnik and applied to claim 3 above, and further in view of Dupre, USPN 5,890,654.

Ash, as modified by Handfield and Ratnik above, teaches all of the claimed limitations as set forth in claim 3, and further, Ash shows the access plug(s) being positioned in a top end of the snow gun tower. However, Ash does not expressly teach including passages through the nozzle block for circulating water therethrough.

Dupre teaches providing passages (63) through the nozzle housing of a snow gun tower whereby water is circulated therethrough in order to prevent an external freeze-up of moisture on the tower (see Figures 8 and 9; and column 7, lines 19-27).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide water-circulating passages, as taught by Dupre, in the nozzle block shown by Ash, in order to prevent external freeze-up of moisture on the tower.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US Patents to Skinner, Ash, Holden, Ratnik et al., Dupre, and Pergay et al., are cited as of interest.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Darren W. Gorman whose telephone number is 571-272-4901. The examiner can normally be reached on M-F 7:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dave Scherbel can be reached on 571-272-4919. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Darren W Gorman
Examiner
Art Unit 3752

DWG 1/24/06
DWG
January 24, 2006

David A. Scherbel
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